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AUTHOR(S):

SATOH, Akinori; MIZUNO, Ryuichi; IKEUCHI, Koichi

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SPONTANEOUS PERIPELVIC EXTRAVASATION SECONDARY TO OVARIAN CYST: A CASE REPORT

Akinori SATOH, Ryuichi MIZUNO and Koichi IKEUCHI

From the Department of Urology, Ootawara Red Cross Hospital

We present a case of spontaneous peripelvic extravasation caused by ureteral obstruction secondary to an ovarian cyst. A 47-year-old woman with lower abdominal pain visited our emergency clinic. Emergency computed tomographic scan revealed extravasation around the left kidney and a left ovarian cyst. She was diagnosed to have spontaneous peripelvic extravasation by retrograde pyelography. A double pigtail stent was placed and the ovarian cyst was removed surgically. Intravenous pyelography performed after removal of the stent revealed neither urinary extravasation nor obstruction.

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Key words: Spontaneous peripelvic extravasation, Ovarian cyst

INTRODUCTION

Spontaneous urinary extravasation in the adult is the most often associated with ureteral obstruction. Most cases are caused by ureteral calculi, and to our knowledge, spontaneous peripelvic extravasation secondary to an ovarian cyst has not been reported.

CASE REPORT

A 47-year-old woman visited our emergency clinic complaining of sudden left lower abdominal pain irradiating to the flank. There was no evidence of abdominal trauma and her medical history was unremarkable. Her vital signs were stable. Blood tests showed only leukocytosis ($11,100/\mu\text{l}$) and no elevation of serum creatinine or blood urea nitrogen was noted. Urinalysis showed 0–1 red blood cells and 1–4 white blood cells per HPF. An emergency computed tomographic (CT) scan revealed urinoma around the left kidney (Fig. 1) and the left ovarian cyst, 5.0 cm in diameter (Fig. 2). She was referred to the department of urology at this time. Retrograde pyelography demonstrated extravasation of contrast

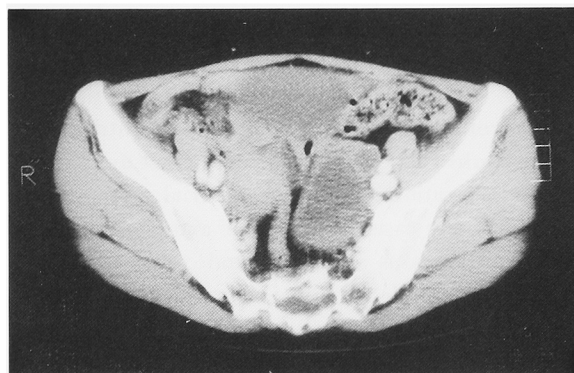


Fig. 2. Enhanced computed tomography shows a left ovarian cyst obstructing the left ureter.

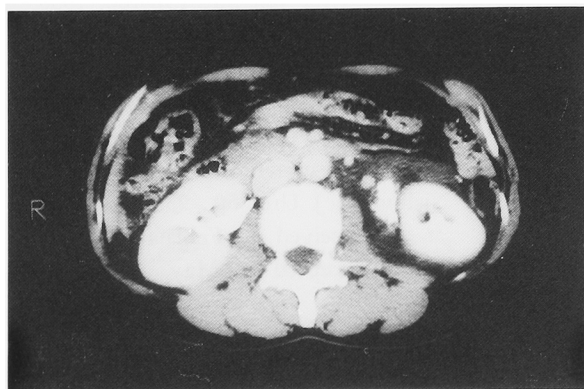


Fig. 1. Enhanced computed tomography showing urinoma formation around the left kidney.

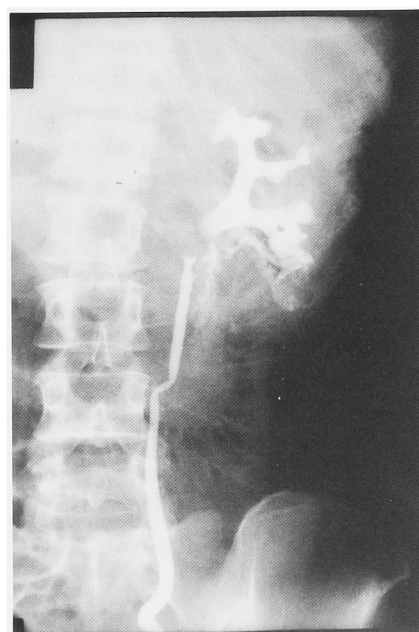


Fig. 3. Retrograde pyelography demonstrates extravasation of contrast material from the left renal pelvis.

material from the left renal pelvis, but the exact ruptured point could not clearly be identified in this study (Fig. 3). The patient was diagnosed as having spontaneous peripelvic extravasation secondary to an ovarian cyst and a double pigtail stent was placed at the same time. Subsequently, oophorectomy was performed. The ovarian cyst was diagnosed as a hemorrhagic cyst pathologically. Nine days after surgery, the double pigtail stent was removed. A follow-up intravenous pyelography performed after stent removal revealed neither ureteral obstruction nor urinary extravasation and the patient fully recovered.

DISCUSSION

Urinary extravasation is classified into two types by its cause, that is "post-traumatic" and "spontaneous". The latter is defined as extravasation in the absence of recent ureteric instrumentation, previous surgery, external trauma, a destructive kidney lesion, external compression and pressure necrosis by the stone¹⁾. Extravasation may occur when the pressure of the collecting system increases by intrinsic or extrinsic obstruction of the urinary tract augmented by administration of contrast material. Hinman et al. studied five cases of peripelvic extravasation seen during intravenous urography and concluded that it is an extreme degree of pelvic backflow and is basically a physiologic phenomenon based on their observations during surgery²⁾. Extravasation through a tear in the collecting system is referred to as rupture of the renal pelvis and requires early surgical intervention³⁾. However, these two expressions are sometimes confused and not always used correctly. Nagata et al. defined peripelvic extravasation as urinary extravasation at which the ruptured point is not identified on radiological examinations or at surgery. On the other hand, a ruptured point is demonstrable in case of rupture of the renal pelvis³⁾. In this case, the exact ruptured point was not clearly shown although extravasation of contrast material from the renal pelvis was demonstrable on the following retrograde pyelography. According to their definition, this case is diagnosed as spontaneous peripelvic extravasation.

Most reported cases of spontaneous urinary extravasation are caused by ureteral calculi. Nagata et al. reviewed 161 cases of peripelvic extravasation and pelvic rupture³⁾. Thereafter, 12 cases were reported on the literature including our case. Of 173 cases, 76 (43.9%) were caused by calculi, 28 (16.2%) by tumor

of the urinary tract, 24 (13.9%) by tumor of the extraurinary tract, 20 (11.6%) by obstructive disease of the urinary tract and 25 (14.5%) were of unknown origin. There have been no reports of cases caused secondary to an ovarian cyst. It was considered that hemorrhage into the cyst leads to acute enlargement of the cyst, ureteral obstruction and peripelvic extravasation. Although not proven, it is possible that diuresis by intravenous administration of contrast material augmented intrapelvic pressure to some extent.

The choice of treatment depends on the condition of the patient and the cause of the extravasation. Benign ureteral obstruction may be treated with reduction of intrapelvic pressure by means of ureteral stenting or nephrostomy and/or removal of the cause of obstruction. In calculous ureteral obstruction with small calculi expected to pass spontaneously, extravasation may improve with only conservative treatment⁴⁾. Extravasation caused by malignancy requires nephrectomy^{5,6)}. In this case, ureteral stenting and removal of the ovarian cyst resolved the extravasation.

To our knowledge, we reported the first case of spontaneous peripelvic extravasation secondary to an ovarian cyst.

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和文抄録

卵巣嚢腫による腎盂外自然溢流の1例

大田原赤十字病院泌尿器科（部長：池内幸一）

佐藤 全伯，水野 隆一，池内 幸一

卵巣嚢腫による自然腎盂外溢流の1例について報告する。症例は47歳，女性で，左下腹部痛を主訴に来院した。緊急 CT スキャンにて左卵巣嚢腫および尿路外溢流を認めた。逆行性腎盂造影を施行し，卵巣嚢腫による自然腎盂外溢流と診断した。ダブルピグテー

ルステントを留置し，卵巣嚢腫に対しては摘出術を施行した。ステント抜去後の静脈性腎盂造影では尿路外溢流および尿管の閉塞を認めなかった。

（泌尿紀要 47：735-737，2001）